

Qi Macro Risk

Measure portfolio risk with unique macro sensitivity analysis based on machine learning

Qi Macro Risk enables risk managers to quantify the underlying macro exposure of assets and entire portfolios.

Identify your portfolio vulnerabilities, characteristics and single instrument sensitivities to macro themes. Harness our innovative quantitative techniques to assess risk and formulate hedging strategies using our equity basket technology.

MACRO EXPOSURE RISK EXPLAINED

- **Robust and technology-driven:** Dynamic and machine-driven Qi Macro Risk data has been designed to help monitor true underlying macro exposure using a rigorous and scientific approach.
- **Proprietary quantitative model:** Macro factors are large in number and highly correlated. This creates challenges for the traditional correlation matrix approach to understanding risk. Quant Insight performs large-scale data transformation and applies a modified Principal Component Regression approach. The net result is the ability to measure the independent impact of each macro factor on an asset price.
- **Calculate portfolio level /stock level macro risk in currency terms:** Use the sensitivity data to identify high-risk stocks in various macroeconomic scenarios effectively. Calculate the change in the value of a stock holding from a shift in each of the macro factors.
- **Stress test and hedge effectively:** Robust daily files provide data that enables users to check the impact of various macro shocks on their portfolio and come up with effective hedging strategies before the event.

The traditional correlation matrix approach struggles in a complex world where the market instruments used for hedging are all inter-related.



EUROPEAN CONSUMER STAPLE



- Inflation Expectations 14%
- Risk Aversion 25%
- GDP Growth 9%
- Global Sovereign Risk 13%
- FX 25%
- Non-Macro 14%

Higher EURUSD poses a risk to this European consumer staple

- **Decompose your portfolio into key drivers:** Dynamic, machine-driven data has been designed to help monitor true underlying macro exposure using a rigorous and scientific approach.
- **Scan the bias of a stock or a portfolio:** Is it macro-driven or micro-driven?
- **Use robust and technology-driven Qi Macro Risk datasets:** Access high quality risk data and integrate seamlessly into your workflows.
- **Analyse the extent to which stock or portfolio returns will be at risk:** Calculate if certain macro factors move against you - or, in a portfolio, assess which stocks have the highest risk factor.

TABLE: Using Qi sensitivities to derive a European equity portfolio sensitive to global trade war fears

Stock Name	Weight	Position Value (EUR)	ADXY Sensitivity	ADXY Exposure (EUR)
Philips Lighting	8.16%	-79,608	1.31	-1,041.44
AMS	8.16%	-79,608	1.15	-918.60
ASM International	8.16%	-79,608	0.95	-752.94
Orkla	8.16%	-79,608	0.85	-673.09
Renault	14.69%	-143,295	0.75	-1,072.56
Telecom Italia	7.35%	-71,648	0.70	-500.24
VAT Group AG	14.69%	-143,295	0.67	-957.78
SocGen	9.18%	-89,559	0.66	-587.78
Erste Bank	9.18%	-89,559	0.51	-454.87
Smurfit Kappa Group	12.24%	-119,413	0.49	-584.29
TOTAL	100%	-975,203	8.02	-7,543.60

Date: 29 June 2018

Measured by ADXY

Position value is the amount invested in each stock, and is found by multiplying EUR 975,203 (the portfolio value) by the corresponding weight.

Weights are calculated as a function of ADXY factor importance, relative to all other macro factors.

Total Exposure = (Position Value * ADXY Sensitivity) / 100. The product of unrounded values

DATA ACCESS

- **Coverage:** S&P 1500, Euro Stoxx 600 single stocks
- **Delivery:** Daily Qi data available over the internet via industry standard Rest API. Cloud based, scalable, flexible and accessed in a Python development environment
- **Qi data risk package:**
 1. Model confidence: How well can macro explain the variance of your stock price?
 2. Sensitivity: How important is a macro factor to the price variance of a stock?
 3. Model Value: Given the current pattern of macro factor associations what is the fair value of your stock?
 4. Fair Value Gap: Is your stock rich, cheap or in line with the current macro regime implied 'Model value'?

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